Manitoba
Natural Resources

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PLANNING REPORT ON NATURAL RESOURCES

ROBLIN-CARTWRIGHT PLANNING DISTRICT

Technical Report 85-4

Preface

Municipal Councils or established Planning District Boards are charged with the responsibility for municipal land use planning and development. This document has been prepared in response to a request from the local municipal planning authority for background material on the subject of natural resources for which the Department is responsible.

This document describes the natural resources in the study area, and identifies Provincial and Departmental concerns and objectives from a land use, development planning perspective. It offers for review, policies and guidelines to remedy, mitigate or anticipate issues and land use problems.

The bases for this report are the Provincial Land Use Policies dealing with natural resources and the policies of the Department of Natural Resources.

Municipal planning is a consultative process, and the information and policies discussed in this document are offered as advice to the local authority in their land planning deliberations.

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FISHERY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

Environmental constraints presently limit continuous game fish production in the Planning District. The lakes are shallow and eutrophic (nutrient rich) while many streams and tributaries are intermittent (Map 1). Most waters are subject to both winter and summer fish kills of varying severity.

Fish kills usually result from critically low dissolved-oxygen levels caused by decomposition of organic matter (usually in the form of algae and aquatic weeds). In winter, this is exacerbated by prolonged periods of ice and snow cover which preclude surface aeration and limit oxygen production via photosynthetic activity. Waters of low mean depth normally do not have sufficient oxygen storage capacity to meet oxygen demand under such adverse environmental conditions.

Rock Lake

Rock Lake is the most significant fishery in the Planning District. Under high water conditions Rock Lake has a surface area of approximately 1,720 hectares (4,250 acres), a maximum depth of approximately 3.8 metres (12.5 feet) and a volume of about 5.2×10^7 m^3 (42,500 acre feet). The Pembina River flows through Rock Lake.

A number of Rock Lake reports have been written dealing with biology[2], water storage[3], water level regulation[1,4], algae and weed control[1,5], fish winterkill prevention[1,6], extent and value of the sport fishery and water quality. Water quality relative to sediment nutrient levels has been researched by personnel from the Freshwater Institute in Winnipeg.

Rock Lake studies to date have not resulted in improved water quality and its related sport fishery. Over the last forty years, fish winterkill or fish jams of varying severity have occurred in about 45% of the winters.

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1 Rock Lake Interdisciplinary Committee. 1976. Interdisciplinary study of measures to enhance the recreational potential of Rock Lake. Manitoba Water Resources Division. 41p. plus appendices.

2 Arnason, I.G. 1956. A biological survey of Rock Lake, July. 1956. Man. Fisheries Branch Report. 27p.

3 Stone, D. 1963. Fisheries aspects of the Pembina Basin Storage Study. Dept. of Mines, Natural Resources, Fisheries Branch manuscript report. 15p.

4 Rock Lake Advisory Committee. 1967. Proposed Rock Lake Improvements. 11p.

5 Manitoba Water Resources Planning Division. 1972. Rock Lake experimental algae control program. Water Quality Section. 17p.

6 Adams, H.J. Rock Lake aeration project report. Manitoba Water Resources Planning Division. 14p.

Repeated winterkills prevent the establishment of large sport species populations. When angling is poor, angler activity and local tourism declines.

The nutrient status of Rock Lake could be improved by reducing phosphorous sources or by increasing the areal loading (increase the outflow significantly without changing surface area to any great degree). The latter alternative appears to be somewhat impractical since present flushing potential is limited, water importation would be costly and extensive water elevations would flood private property. Reducing phosphorous input may be difficult as some sources are likely diffuse, e.g., run-off, groundwater and precipitation. Internal nutrient recycling from the bottom sediment can be expected especially under anerobic periods typically found when winterkill develops. However, obvious nutrient point sources should be controlled. Nutrient inactivation is a costly lake restorative procedure but would reduce nutrient cycling and improve water quality. This should only be attempted as part of a total watershed protection program.

The shallow depth of Rock Lake means less initial winter dissolved-oxygen storage. The rate of winter dissolved-oxygen depletion in stable non-stratified lakes is fairly constant so the time to development of winterkill conditions relates largely to the mean depth of the lake and its related dissolved oxygen storage volume[7]. On this basis, water level increases resulting in a significant increase in mean lake depth should decrease the frequency and severity of Rock Lake fish winterkills. Slight water level increases, without substantial dyking of valley flats, may actually reduce the mean depth of Rock Lake, flood lowlands resulting in more nutrient leaching to the water, further reduce water quality and increase weed production.

Costly aeration systems could be designed and installed in Rock Lake to prevent winterkills. This would have a limited positive impact on the algae problem. The previous unsuccessful aeration attempt[6] used only a small fraction of the air flow actually required to prevent winterkill.

From 1966 to 1970, 40 tons of copper sulphate were applied to Rock Lake. Algae growth was fairly well contained during the period of treatment and this made the area more attractive to various resource users. Nutrients not used by the algae may have produced more luxuriant aquatic weed growths as fish winterkills still occurred in three of the five years of treatment.

The Rock Lake fishery is dominated by northern pike, perch, suckers and bullheads. Walleye are less tolerant of low dissolved oxygen levels, but have been stocked on three occasions since 1979. Angling success is erratic and somewhat dependent on the size of upstream fish runs from the lower Pembina and Red Rivers. The frequency and severity of recent winterkills is another factor, although nine springs along the north shore provide some freshwater for fish survival and winterkills are rarely complete. Artificial stocking of walleye, bass, perch and pike date back to 1924. Restocking is normally heaviest in those years following a winterkill.

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[7] Barica, Jan and John A. Mathias. 1979. Oxygen depletion and winterkill risk in small prairie lakes under extended ice cover. J. Fish. Res. Board Can. 36(8). 980-986.

Characteristics of the Rock Lake sport fishery are adequately described in another report[1]. This fishery is highly valued by local residents, and at times, a large percentage of the angling public is American.

Lorne and Louise Lakes

Lorne and Louise Lakes are shallow lakes that consistently winterkill and therefore lack a permanent game fish population. Both lakes support a very heavy growth of aquatic vegetation and, as such, are important spawning areas for pike.

Small springs are sometimes active at the southeast corner of Lorne Lake and the west shore of Louise Lake. Young-of-the-year pike, suckers and bullheads commonly congregate at the spring areas in early winter as dissolved oxygen levels in the water decline. Some pike have been salvaged from these springs and taken to lakes that are less likely to winterkill.

A small unnamed tributary enters Louise Lake at its southwest corner. A large number of pike and suckers occasionally have been reported spawning in this stream up to four miles above Louise Lake.

Badger Creek

In high flow years, spawning pike and suckers from Rock Lake are able to proceed up Badger Creek as far as Rock Lake in North Dakota. Some adult pike, but especially their progeny, occasionally become stranded in this North Dakota lake as water levels recede.

Flows at the North Dakota-Manitoba border often decline quickly following the spring freshet. However, springs along Badger Creek in Manitoba usually help to maintain varying flows into the late fall.

A variable habitat along Badger Creek provides spawning potential for walleye, pike, bullheads and suckers while adequate flows in most years allow time for these species to return to Rock Lake. Other small fish species (sticklebacks, darters and fathead minnows) also occur in Badger Creek. They provide forage for pike and walleye.

Other Major Tributaries

The quantities of fish frequenting Rock Lake tributaries vary with the timing and volume of spring flows and the number of fish surviving in Rock Lake. In some years fish runs are non-existent. Most spawners return to Rock Lake shortly after spawning, but the tributaries serve as rearing areas for the newly hatched fry and fingerlings.

Gimby Creek joins Badger Creek near Cartwright and is the major tributary supporting sporadic runs of spawning fish from Badger Creek. Some of the other tributaries support lesser runs in some years. Gimby Creek is scattered with rock over much of its length and some deeper holes, up to about eight feet deep, occasionally overwinter suckers and bullheads. Pike and suckers are known to move up Gimby Creek at least six lineal miles west of No. 28 Highway.

A portion of Long River, within the Planning District, lies in a deep ravine that demonstrates some spring activity. Near the junction of Long River and Badger Creek, substrate are suitable for walleye spawning. In recent years, walleye have rarely been noted in this area but pike and sucker runs occur annually if Rock Lake winterkills have not been severe.

Due to steep gradients and intermittent flows, most tributaries to the south shore of Rock Lake have limited spawning potential. However, nutrient loading activity in this area is a concern because of its close proximity to Rock Lake and the indirect adverse impact of nutrient enrichment on water quality and fish populations. The same is true for an unnamed tributary stretching from west of Mather to Cypress Creek. Nutrient loading in this area can impact Pembina River waters outside of the Planning District.

II. CONCERNS/OBJECTIVES

Several tributary streams to Pembina Valley lakes and the Boissevain Reservoir lie in an agricultural area which influences fisheries potential in the Planning District. The shallow nature of existing water bodies, intermittent flows, erosion, nutrient loading and drainage have impacted some fish stocks. Any factors that adversely influence water quality or quantity can adversely influence fish populations. Since demand is high and fishing opportunities are few, existing fisheries and upstream watersheds should be protected from nutrient loading and contamination.

Fish are a renewable resource and it is incumbent upon all governments to ensure the provision of a suitable habitat that will assure continuing fish stocks for the long term benefit of all Manitobans.

Specifically, the fisheries concerns/objectives are:

1. To ensure the survival or improvement of fish stocks, subject to the effects of natural environmental changes and approved man-made environmental changes. Fish habitat associated with Rock Lake, Lorne Lake and Louise Lake should be protected. Similarly, activities and development along Badger Creek, Long River, Gimby Creek and other tributaries can influence downstream resources.

2. To maintain, enhance and diversify angling opportunities to Manitobans to meet existing and future demands.

3. To promote communication and cooperation between private landowners, industry, the public, local government and the Department of Natural Resources so as to achieve high standards of conservation practices.

III. POLICIES/GUIDELINES

Although fisheries habitats are being stressed and have been reduced, what remains can be retained and enhanced by judicious use of land and water in the Planning District. In order to achieve the fisheries objectives and to mitigate and alleviate concerns, the following apply:

1. Fisheries habitat, spawning sites and nursery areas should be protected.

   a) Ditching and stream rechannelization should not be permitted in direct tributaries to the watershed capable of supporting spawning and nursery habitat. The construction of dykes as opposed to channel deepening and straightening shall be encouraged. Measures to limit nutrient and sediment inflow shall be encouraged.

   b) Land clearing, cultivation and development to the edge of significant waterways shall be prohibited. Where possible a buffer strip of natural vegetation 91.5 metres (300 feet) wide from the ordinary high water mark shall be maintained along the watershed. Development or maintenance of appropriate vegatative cover along waterways to prevent erosion, siltation and reduce run-off shall be encouraged.

   c) Enrichment of natural waters (organic loading or siltation) as a result of agricultural run-off from all lands shall be discouraged.

   d) River and stream crossings associated with road development should be constructed with reference to the Department of Natural Resources' stream crossing guidelines to minimize damage to fish and fish habitat.

2. Shoreline subject to intensive use and development should be protected from excessive erosion and organic loading. Activities that discharge pollutants shall be restricted in their location and it may be required that precautionary safeguards that mitigate the pollutant be incorporated into the development activity.

3. The right of public access to fishing waters shall be maintained in accordance with such Acts, Regulations and contracts that are in place from time to time.

4. Wherever practical, the maintenance and/or increase of water levels to maintain and improve fish populations shall be encouraged.

IV. IMPLEMENTATION

The objectives and policies with respect to fisheries shall be implemented as follows:

1. By assistance and advice on conservation practices by the staff of the Department of Natural Resources.

2. By public and private co-operation through management and development agreements.

3. By the Council through the judicious use of restrictive zoning by-laws, subdivision control procedures and the issuance of development permits.

FORESTRY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The Roblin-Cartwright planning district is within the Aspen Parkland Section, Forest Management Unit 04 as defined in the Manitoba forest inventory classification system, 1980. Forest inventory on the area was completed in 1982. Both Crown land and private land forest inventory information is available and should be of benefit to landowners in the area.

As the area is in close proximity to population centres landowners with forested land on their holdings might consider growing trees as a crop, for example, fuel wood. This is particularly true for land unsuitable for other agricultural purposes but still capable of supporting tree growth.

While trees and forests have value as a renewable cash crop their presence is valuable in other ways. These include control of precipitation run-off and retarding snow melt to lessen flood risk; erosion control both water and wind; a habitat for wildlife; and, recreation opportunities for people. Furthermore, forest havesting operations can be done in a manner that will enhance all forest values; however, it is essential that fire be kept out and any utilization or disposal of elm trees is further subject to The Dutch Elm Disease Act and Regulations.

II. CONCERNS/OBJECTIVES

Principal Objective:

To effectively manage and protect forested lands, and to maintain and enhance the overall benefits accruing from the forest resource.

Specific Objectives:

1. To sustain the integrity of the forest land base in Manitoba and to maintain the forest resource in a healthy and productive state.

2. To encourage responsible use and husbandry of the forest resource, to obtain maximum achievable net benefits including employment and recreation opportunities, sound land use practices and soil conservation.

3. To assist in the creation and sustenance of self-supporting industries by providing appropriate tenure and access to a forest resource managed under sustained yield practices.

III. POLICIES/GUIDELINES

The general policy applying to forests on Crown land will be to improve sustained yield and intensive management practices beginning with the more productive and accessible forest sites in the Province as economic conditions and funding support permits.

The general policy applying to forests on private land will be to encourage efficient and effective utilization of these timber resources as cash crops, and as a soil conservation land use technique for controlling erosion, etc.

IV. IMPLEMENTATION

The objectives and policies as outlined shall be addressed and implemented as follows:

1. By the Board and/or councils through the judicious use of restrictive zoning by-laws, subdivision control procedures and the issuance of development permits which recognize the intent of the concerns and objectives identified.

2. By encouraging good forest management practices on all forested land.

3. By maintaining the integrity of the forest land base, and considering possible Crown land additions to the Provincial Forest.

4. By assistance and advice on conservation practices by staff of the Department of Natural Resources and by public and private co-operation through management and development agreements.

OUTDOOR RECREATION

I. PRESENT CONDITIONS/INTRODUCTION

The highest capability for outdoor recreation in the Roblin-Cartwright Planning District is centred on the shorelands of Lorne, Louise and Rock Lakes which form part of the Pembina River valley (Map 1). These shorelands are classified by the Canada Land Inventory for Outdoor Recreation as having a high to moderate capability - Class 2 to 5, for a wide variety of water-oriented activities - bathing, camping, cottaging, angling, boating, etc. These lakes, and particularly Rock Lake, are an important regional resource for outdoor recreation, and ready access has resulted in a high level of development and use. Water quality is a limiting factor, however. The Rock Lake area has archeological significance of a provincial scale.

The uplands of the district are interesting and provide some opportunities for more extensive types of recreation activities. The pothole-wetland environments are important to outdoor recreation activities relating to nature interpretation, bird watching, recreational hunting and travelling and viewing.

II. CONCERNS/OBJECTIVES

Future development of the Roblin-Cartwright Planning District should be guided to use fully the potential for outdoor recreation; to maintain or enhance environmental quality, and to prevent land use conflicts with outdoor recreation uses. The identification and management of the basic recreation resource is important, particularly along the Pembina River valley and associated shorelands. Areas of high recreation potential should be safeguarded through proper recognition in planning documents and policy implementation. If recreation opportunities are disrupted by conflicting developments or uses, these opportunities and benefits will be degraded, very likely in a permanent fashion.

The following are specific concerns:

1. The shorelands of Rock Lake should be identified and safeguarded through proper recognition and use policies which give a priority to outdoor recreation use.
2. The importance of the Pembina River Valley to outdoor recreation should be recognized and safeguarded, including Lorne and Louise Lakes. The Valley is recognized by the Provincial Park System Plan for designation as a trailway park. The area between Windygates and Rock Lake would be developed initially.
3. The pothole-wetland areas are an important outdoor recreation resource and must be identified and managed as such.
4. The sensitivity of recreation resources in the Planning District to development should be considered. Development should only occur to the carrying capacity of the resource, as determined by the most limiting factors, such as water quality.
5. Recreation lands must be afforded protection from adjacent uses which would diminish or endanger recreation opportunities. Areas which have a Class 2 or 3 designation should receive special attention.
6. Public access must be maintained or improved. Major road access corridors to recreation areas should be identified and afforded protection in order to maintain the integrity of the recreation opportunities.

7. The benefits to the community from local recreation opportunities must be maintained or enhanced.

8. Future areas of high recreation potential must be protected from unplanned, sporadic residential development.

9. Residents must continue to have the wide choice of outdoor recreation opportunities which presently exist.

III. POLICIES/GUIDELINES

1. a) The shorelands of Rock Lake should be defined. Resource and land use policies in this area should provide proper recognition of the outdoor recreation opportunities provided, with particular recognition to Class 2 and 3 areas.

   b) Within the Pembina River valley, the importance of outdoor recreation opportunities should be identified and managed through appropriate land use policies.

   c) Wetlands, including potholes, are very important to the maintenance of outdoor recreation opportunities in the area. This importance will be identified and policies to protect this valuable resource will be developed.

2. a) Development policies on lands adjacent to existing or potential recreation areas should not endanger or disrupt the recreation areas. Non-recreational or permanent residential development may not be supportive of outdoor recreation activities, and it may be desirable to separate these developments through policy. Natural vegetation which provides a buffer zone to protect recreation activities from conflicting land uses must be preserved.

   b) Agricultural land use practices and policies applying to areas within or in close proximity to important existing or future outdoor recreation areas shall not adversely affect the recreation opportunities.

   c) Scattered or random residential development would generally be in conflict with outdoor recreation priorities.

3. a) All non-recreation uses in recreation areas shall be regulated so that they do not pre-empt or restrict outdoor recreation opportunities.

   b) Land severances, subdivisions, etc., in outdoor recreation areas shall be for outdoor recreation purposes. The subdivision of lands for the development of outdoor recreation opportunities shall be permitted only if the area is able to support such development without degrading the resource, over the long term.

   c) Within the Planning District, specific areas for cottage development or seasonal residential should be identified in order to reduce possible uncontrolled development, and to maintain the integrity of recreation areas.

d) Appropriate limiting factors, development standards and control guidelines should be established, for example; alternate development clusters with open space; and encourage large lot development with suitable setback and sideyards.

e) New permanent residences should not be allowed in seasonal residential areas in order to minimize servicing and maintenance costs.

4. Land and soil conservation practices which endanger or degrade outdoor recreation opportunities shall be prohibited - e.g., clearing of vegetation from steep slopes, land or soil management practices which would further degrade water quality.

5. a) Existing public rights of access to outdoor recreation opportunities shall be maintained or improved.

b) The designation of development policies respecting lands adjacent to and along access roads to existing or future parks and recreation areas shall not endanger or degrade the recreation experience.

6. The Planning District shall encourage the development and growth of outdoor recreation enterprises and service functions which are compatible with the character of the community.

IV. IMPLEMENTATION

The policy objectives can be achieved by means of zoning by-laws, conditions of subdivision approval, development permits and building permits.

Consultation with staff of the Department of Natural Resources is encouraged.

WATER RESOURCES: GROUNDWATER

I. PRESENT CONDITIONS/INTRODUCTION

The groundwater supply in the District is adequate for present requirements and some new development. In most of the district aquifer yield is adequate for domestic farm requirements. Some fairly extensive aquifers suitable for municipal and moderate industrial requirements exist in the western part of the District.

Three kinds of aquifers can be discerned in the District: extensive sand and gravel, lenses of sand and gravel and fractured shale (Map 2).

Water quality in the District ranges from very poor to good. The total dissolved solids concentration ranges from less than 1000 mg/L to more than 3000 mg/L. High hardness and high sulphate and iron concentrations are fairly common.

In several areas sand and gravel or the shale bedrock are at or near surface. Because in these areas aquifers could be infiltrated by pollutants, they are classified as groundwater pollution hazard areas (Map 3).

II. CONCERNS/OBJECTIVES

The total groundwater supply in the District is adequate for present requirements and moderate future development. Groundwater is the principal source of water supply for domestic and farm requirements. The municipal water system of Cartwright uses groundwater. Hence the overall concern is groundwater resource management and protection to assure adequate supply for existing users and for potential development. Most of the aquifers developed for water supply are overlain by sufficiently thick low permeability surficial deposits to prevent pollution of the aquifers. In several areas, however, the materials that may form aquifers are at or near ground surface and are subject to pollution. Consequently these areas are considered to be groundwater pollution hazard areas (Map 3). Pollution prevention in these areas is the main concern in the District.

Objectives

1. To manage the aquifers in a manner that would not deprive existing users of their water supply and would not have a detrimental effect on groundwater potential in the District.

2. To maintain groundwater withdrawal within acceptable limits.

3. To prevent aquifer pollution.

III. POLICIES/GUIDELINES

1. Intensive development (subdivisions) and high capacity wells should be permitted only in areas where they will not cause a reduction in water supply for existing users.

2. Groundwater consumption should not exceed the total sustained yield of an aquifer.

3. Wells should be installed in a manner that would not have a detrimental effect on aquifers.

4. Activities that may cause pollution under normal operating conditions or by accident should not be permitted in groundwater pollution hazard areas unless it can be proved by adequate field investigation that the proposed activities will not cause pollution of existing or potential groundwater supply in the area.

IV. IMPLEMENTATION

1. Aquifer management is implemented by the Water Resources Branch of the Manitoba Department of Natural Resources under the provisions of the Groundwater and Water Well Act and the Water Rights Act.

2. Well construction in respect to prevention of detrimental effect on aquifers is regulated by the Water Resources Branch of the Manitoba Department of Natural Resources under the provisions of the regulations made under the Groundwater and Water Well Act.

3. Aquifer pollution prevention is implemented by the Environmental Control Services of the Department of Environment and Workplace Safety and Health.

WATER RESOURCES: SURFACE WATER

I. PRESENT CONDITIONS/INTRODUCTION

The Roblin Cartwright Planning District is located in the Pembina River drainage basin. The Pembina River, which forms the north boundary of the District, flows in a broad U-shaped valley, widening occasionally to form a chain of small lakes. Rock, Lorne and Louise lakes are situated along the boundary of the District. The bulk of the District is above and south of the Pembina River Valley. Drainage in this area is by means of natural creeks, carrying run-off north and northeast to the Pembina River. Large areas of the District are characterized by dense concentrations of sloughs or potholes without, or with limited, drainage outlets.

There are about 5 miles (8 km) of provincial waterways in the District. The remaining waterways are under municipal jurisdiction (Map 4).

II. CONCERNS/OBJECTIVES

Certain lands adjacent to the lakes and streams within the District may be subject to hazards such as flooding, erosion or bank instability. Other areas may have insufficient drainage. Development or other unsuitable lands uses in hazardous areas may lead to acceleration of environmental damages, interference with natural processes, public expenditures for remedial works or assistance, waste of resources and personal loss and hardship.

Objectives

1. To minimize personal hardship and inconvenience, adverse effects on public health and loss of life;

2. To minimize property damage and public expenditures for relief or protection in areas subject to flooding, water erosion, wind erosion, bank instability, landslide or subsidence;

3. To restrict activities which would accelerate or promote damages arising from causes such as erosion or bank instability;

4. To acquire access to all waterways in order to carry out public works projects when required;

5. To maintain the natural capacity of the streams to convey flood flows;

6. To encourage the preservation of natural vegetation along the banks of waterways.

III. POLICIES/GUIDELINES

1. Development in areas which, in the opinion of the Board or Council, may be subject to hazards such as flooding, erosion or bank instability shall generally be limited to agricultural cropping or open space uses. Under special economic or social circumstances The Board or Council may permit more intensive development if the hazard is eliminated or protected against. Development in these hazardous areas shall be subject to the following requirements;

   a) If the land is subject to flooding all permanent structures shall be

located on land which has been raised by fill to the flood protection level.

b) Land which may be eroded away within a period of 50 years shall be excluded from development unless it is demonstrated, to the satisfaction of the Board or Council, that the erosion process has been halted.

c) Development shall not be permitted on lands subject to bank instability, landslides or subsidence.

d) All structures and services shall be protected against damage and shall be functional under hazard conditions.

2. Notwithstanding (1) development will not be permitted if, as a result of the development;

a) There is an added risk to life or safety, or

b) Water flow, flow velocities or stages are adversely altered, obstructed or increased.

3. Activities such as dumping, excavation, clearing, cultivation, or excessive grazing which would accelerate or promote dangerous erosion or bank instability will be prohibited.

4. In areas where the specific hazard has not been defined, permanent structures shall be set back from all waterways a distance of at least 10 times the height of the bank above channel grade or 60 metres whichever is greater unless an engineering investigation shows that these limits may be reduced.

IV. IMPLEMENTATION

The Policies shall be implemented by means of, variously, zoning by-laws, conditions of subdivision approval, the issuance of development permits and building permits, development agreements and such programs as are determined from time to time by the Board or Councils to be necessary and not in conflict with the provisions of any part of the Plan.

WILDLIFE RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The majority of the Planning District falls within the Waskada Till Plan, an area of flat to more-or-less undulating landscape. Numerous ravines flow northward into Badger Creek or Lorne, Louise and Rock Lakes. Badger Creek is a large tributary of the Pembina River, entering the Pembina River Valley near Neelin. The majority of the plain is largely under cultivation or in open aspect pasture, periodically dotted with morain depressions or potholes.

Wildlife habitat throughout the district is scattered over what is predominantly private land. Habitat is largely confined to small bluff and pothole areas on what are agriculturally very good soils. The habitat that is necessary to produce and maintain all wildlife species is becoming less abundant each year. Population figures for all species of wildlife are largely unavailable.

White-tailed Deer

The Canada Land Inventory ungulate capability rating for this area of southwestern Manitoba varies considerably, depending on the locale (Map 5). Most of the major ravines and tributaries of the Pembina River as well as the escarpment area of the valley itself are rated as Class 1 or 1w winter range for deer. Upstream portions of Badger Creek are rated Class 3w while smaller areas in the northern part of the municipality are rated Class 2 and 3 respectively. At least three townships in the flat uniform area near Holmfield and adjacent to the U.S. border are rated as Class 6 for deer. The remainder of the municipality is classed 4 or 5 for this common big game animal.

It should be recognized that although the capability ratings for much of area are relatively low, the actual value of existing habitat to white-tails is probably much higher, simply because there is little tree cover in large blocks remaining. Summer range is probably adequate for good deer populations but winter range is confined to the larger blocks of bush and the uncleared slopes of ravines and the Pembina Valley escarpment. Deer surveys of Game Hunting Area 31A, which includes all of district, plus portions of several adjacent municipalities, have estimated the midwinter deer population at more than 2,000 animals.

Waterfowl and Wetlands

The most productive area for waterfowl production is a wide strip of land in the central part of the District that is rated as Class 2 by CLI (Map 6). In the north and south ends of the District there are two areas of Class 3 land which, like the Class 2 rated area, is largely bluff and pothole country. During years of reasonable water levels, these areas are important producers of ducks. The remainder of the District has been rated fairly low for waterfowl production, simply because of the lack of potholes and marshes. Lorne, Louise and Rock Lakes on the District's northern periphery are rated Class 3 and are particularly noted as waterfowl staging areas. In recent years, these three lakes annually act as resting areas for large numbers of migrating Canada and snow geese. No reliable population figures are available for staging goose populations, but between the three lakes, it would not be unrealistic to count

approximately 50,000 geese frequenting these lakes. Rock Lake is the only formally-designated Game Bird Refuge but the others also function as refuges because of their size.

Although there are numerous potholes throughout the District, there are few marshes that exceed 40 acres in size. In Township 2, Ranges 14 and 15 there are perhaps a dozen marshes which would be of this size or larger in years of average water conditions. Waterfowl production throughout the District is of ducks; there are no confirmed records of nesting geese in recent years.

Furbearers

Furbearers are found throughout the municipality. Aquatic furbearers such as beaver and muskrat will be found in association with wetlands or ravines with a constant water source. Coyotes, red fox, raccoons, weasel, badger are likely to be found anywhere suitable habitat remains.

Non-Game Species

There is no particular species of non-game wildlife in the District that warrants protection or consideration, particularly with regard to habitat. A wide variety of animals and birds in this category occur in the District but their status is unknown. As encroachment on treed or pasture areas continues, as well as escalation of drainage of potholes and sloughs, the resulting habitat loss will result in a decline of wildlife, both game and non-game species.

Order-in-Council Wildlife Lands

In the Northern part of the District the Rock Lake Game Bird Refuge, confined to Rock Lake and a narrow margin of upland around the lake, has been in existence for many years. This refuge plays an uncertain role in the protection of waterfowl on the lake during the hunting season.

There are one and one-quarter square miles of Wildlife Management Area within the District, these being the Neelin (NW 14-3-14W) and West Derby (E 1/2 19 and E 1/2 29-3-15W) Units of the Pembina Valley W.M.A. (Map 1).

Wildlife Projects

Ducks Unlimited have three projects within this District, these being as follows:

Kissick Project	W 1/2	5-2-15W
Mather Project	N 1/2	9-2-13W
	SW	9-2-13W
Rolagaf Project	N 1/2	27-2-14W
	NW	26-2-14W
	S 1/2	34-2-14W
	W 1/2	30-2-14W
	S 1/2	33-2-14W
	SW	25-2-14W
	NE	24-2-14W

II. CONCERNS/OBJECTIVES

Flooding and damage caused by beaver is not serious but does occur along highways and municipal roads or on private land. Regional staff, Highways Department or municipal staff deal with problems as they occur.

Deer damage to forage or cereal grain crops has been minimal and complaints to Regional staff have not increased. Most problems occur during winter when deer are clumped on winter range and venture out to cause problems on stored forage or grain. Field staff can use a variety of techniques to prevent damage if the affected farmer does not wish to claim for compensation for his losses to big game.

The issue of disappearing wildlife habitat continues to be of prime concern in this district and across southern Manitoba. This continued decline in habitat will eventually result in a noticeable decline in wildlife numbers and perhaps in species.

Recreational Aspects of Wildlife

The most notable use of wildlife is by recreational hunters, who frequent the area for waterfowl, upland game birds and deer. Out-of-season use of wildlife by the public is not exceptional in this area.

Objectives

The following objectives and policies are suggested for consideration by the Board.

1. To maintain wildlife populations at existing levels, particularly on poorer quality land.

2. To promote programs and legislation to monitor wildlife habitat on private land, unused road allowances and other Crown land.

3. To promote conservation and cooperation between people and agencies, i.e., the District Board, Municipal Council, government departments, Ducks Unlimited (Canada), to found an active program of conservation of habitat and wildlife resources within the District.

III. POLICIES/GUIDELINES

The following policies should be applied in order to promote the maintenance, production and use of wildlife resources within the District.

1. The Board should protect, if at all possible, the clearing of bush on all lands within an agricultural capability of Classes 4, 5 or 6.

2. Rural subdivisions and industrial developments in the vicinity of Lorne, Louise and Rock Lakes should be discouraged.

3. Areas prone to waterfowl or deer depredation should be recognized and landowners encouraged to seek assistance or advice from Department of Natural Resources staff.

IV. IMPLEMENTATION

The objectives and policies of the District with respect to land use and wildlife resources should be implemented as follows:

1. By assistance and advice on conservation practices by staff of Department of Natural Resources or the Department of Agriculture.

2. By public and private cooperation through management and development agreements.

3. By the adoption of zoning by-laws.

4. Through the control of subdivisions and the issuance of development permits where applicable.

5. By the adoption of municipal by-laws prohibiting the clearing/breaking of unused road allowances.

CROWN LANDS

INTRODUCTION

This section describes the Crown lands in the Planning District, providing an inventory of Crown lands and present commitments. Additionally, this section will discuss the authority for Crown lands, the legal aspects thereof and the planning and administration of Crown land.

DEFINITION

Crown land, for the purposes of this section, is defined as all land under Order-in-Council designated as; Provincial Park, Provincial Forest, Ecological Reserve, Wildlife Management Area, and Community Pasture, plus all other land administered by the Department of Natural Resources and Department of Agriculture under 'The Crown Lands Act'. In addition, all water bodies, streams, rivers, and creeks are considered Crown lands except where original title has confirmed the lake bed or stream bed to an individual.

ACTS AFFECTING CROWN LANDS

There are a variety of acts which affect the administration and management of Crown lands. For the purposes here, the principal acts which govern use and management of these lands are:

1. The Crown Lands Act,
2. The Fisheries Act,
3. The Forest Act,
4. The Provincial Park Lands Act,
5. The Water Power Act,
6. The Rivers and Streams Act,
7. The Wildlife Act, and
8. The Water Resources Administration Act.

MANAGEMENT AND ADMINISTRATION OF CROWN LAND

The actual management and administration of Crown land is split between two Dpartments of Government, the Departments of Natural Resources and Agriculture. The Agricultural Crown Lands Branch has been assigned the functions and related administration pertaining to the issuance of agricultural leases and permits of occupation or use of those Crown lands which are designated by the Minister of Natural Resources as:

1. primarily agricultural lands, and

2. designated as multiple use lands which may only be used for agricultural purposes on an interim or secondary use basis, subject to specific conditions and covenants required by other resource users.

The principle responsibility for Crown land remains with the Department of Natural Resources, which administers The Crown Lands Act excepting those specific sections under the responsibility of the Minister of Agriculture.

The Minister of Natural Resources is responsible for administration, direction and control of the surveys of Crown lands. Survey monuments defining Township, Section and Quarter Section corners have been established throughout the Planning District.

The protection of the township survey fabric, the primary function of which is to support the transferring of rights in land via The Real Property Act or The Crown Lands Act, is essential to efficient and effective land administration. No system, purporting to give evidence of the ownership of land is complete if one cannot determine what land is being conveyed or where its boundaries are located. Boundaries, once defined, are a matter of law and the survey monument is the vital link between the ground and the administrative record.

CROWN LAND CLASSIFICATION AND PLANNING

Crown land is exempt from The Planning Act and is under the jurisdiction of the Manitoba Government as governed by the various acts of the Legislature mentioned above.

The classifying to use of Crown land in the southern portion of the Province is the responsibility of the Crown Land Classification Committee, (CLCC). This is an interdepartmental Committee with representation from the Departments of Agriculture, Natural Resources and Municipal Affairs. The CLCC reports to and receives their direction from the Provincial Land Use Committee of Cabinet.

In carrying out this responsibility, the CLCC has established Bloc Planning Committees (BPC's). These BPC's have regional representatives from the Departments of Agriculture, Natural Resources and Municipal Affairs. The BPC's provide field recommendations, in effect, providing to the CLCC preliminary land use plans for their consideration of Crown lands. They are not, however, final plans. The Crown Land Classification Committee requires that all such plans must be reviewed and commented on by Local Councils and/or Planning District Boards. It is only after such review and appropriate adjustment if necessary, that a final Crown land plan is prepared.

INVENTORY

In the Roblin-Cartwright Planning District there are approximately 583 hectares of Crown land, (Map 1, Table 1), representing approximately 0.8 percent of the land base in the District.

PRESENT COMMITMENTS

In the Roblin-Cartwright Planning District, the major commitments of Crown land are to agricultural use via leases, and Wildlife Management Area under Order-in-Council. (An additional parcel, E½ 29-03-15W, is under consideration for addition to Pembina Valley Valley Wildlife Management Area.)

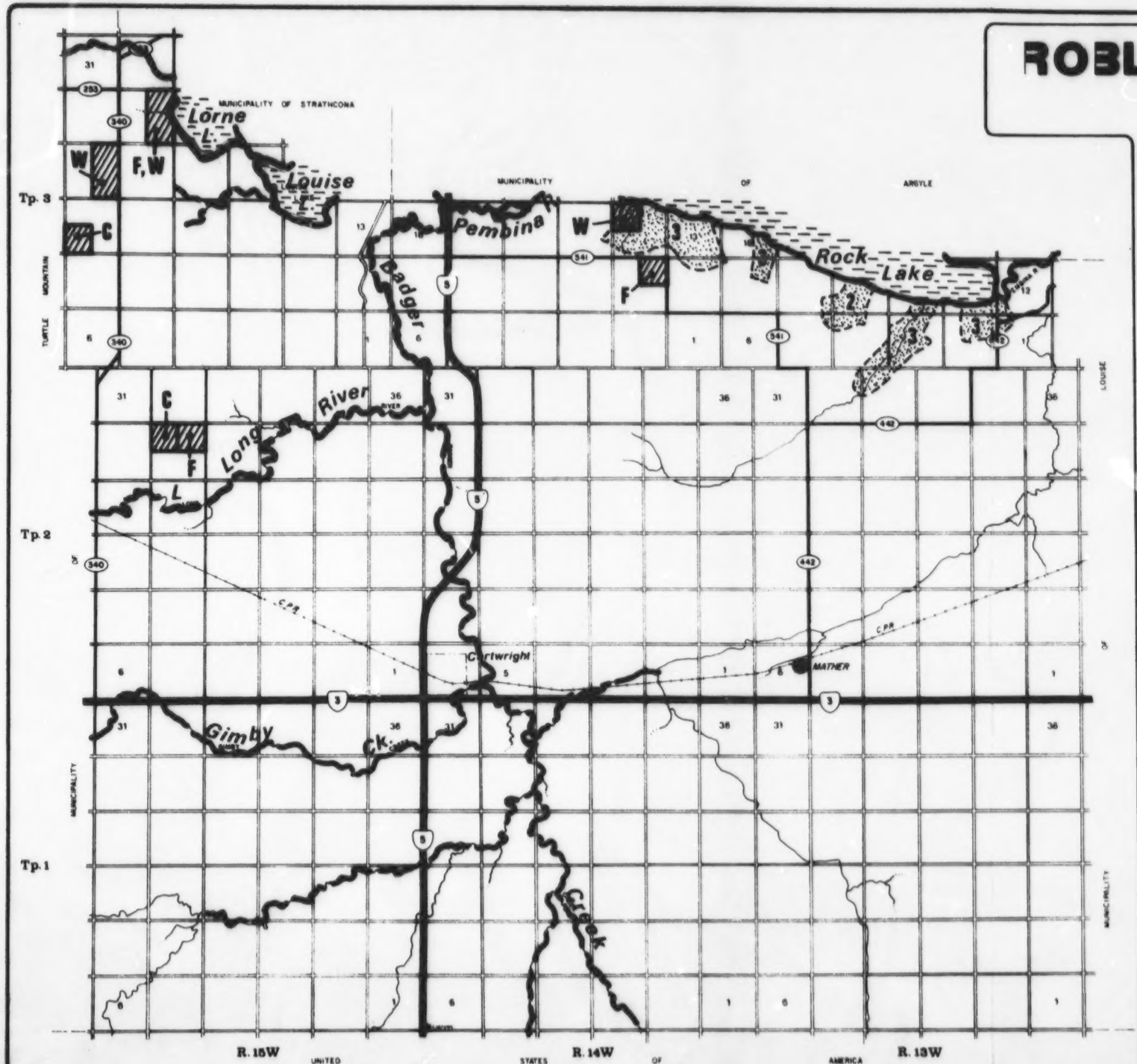
However, it must be noted that the commitment of Crown land is a dynamic process with leases and permits being issued, expiring, being renewed, cancelled and dropped. This occurrence is a day-to-day administrative process being actioned by various Departments of Government.

Table 1. Crown Land Commitments in the Roblin-Cartwright Planning District, July 1984.

Commitment	Number	Area hectares (acres)
Agricultural		
Forage Lease	4	253 (625)
Cash Rental Agricultural Lease	2	132 (326)
Order-in-Council		
Pembina Valley Wildlife Management Area	1	324 (800)
Total Provincial Crown Lands		583 (1,440)

ROBLIN-CARTWRIGHT PLANNING DISTRICT

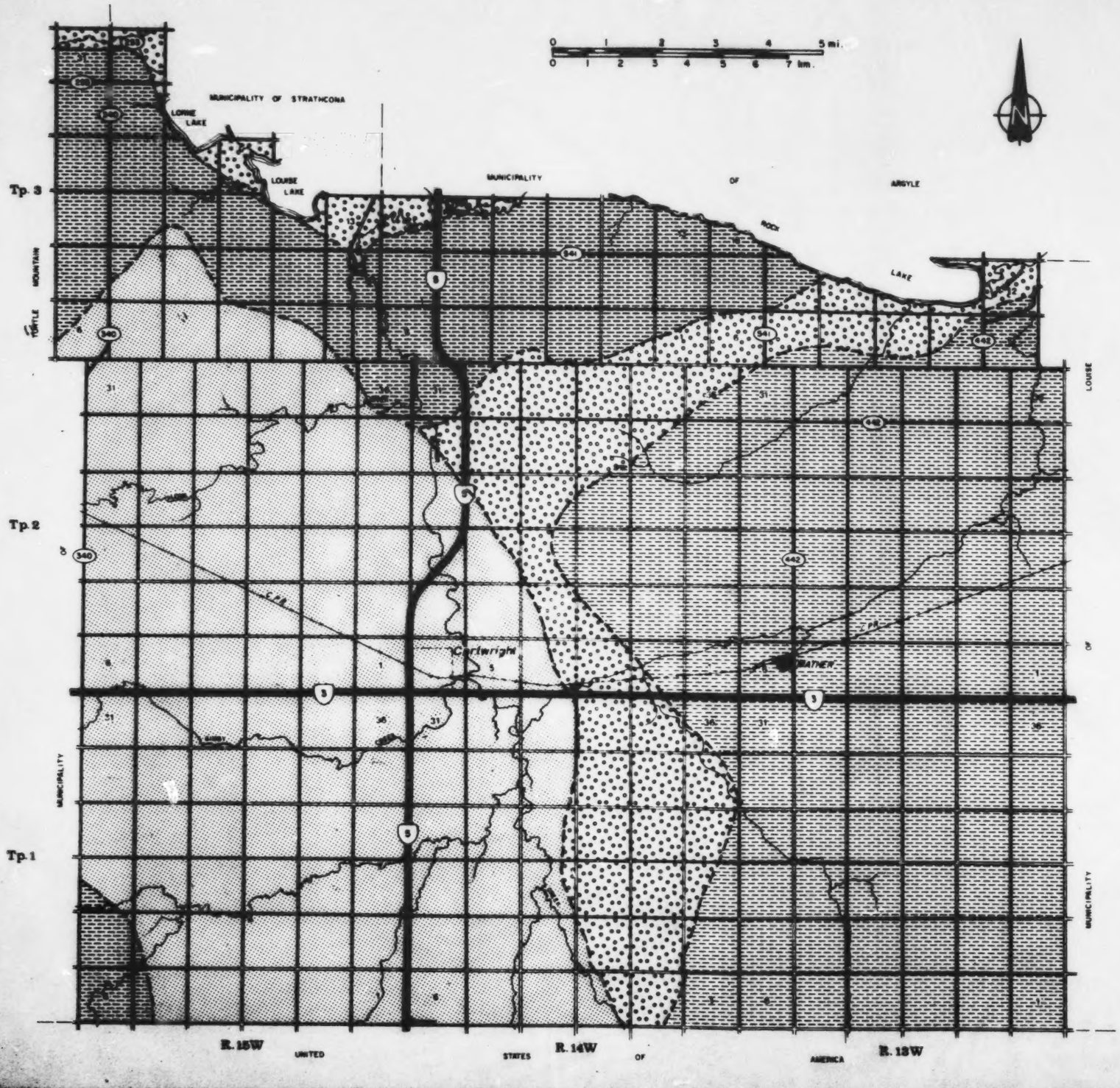
Map 1. Fishery & Outdoor Recreation Sites, Crown Lands & Crown Land Commitments (June, 1984).



- Fishery & Outdoor Recreation Sites
- Other Fishery Sites
- Land Capability for Outdoor Recreation (Canada Land Inventory) - Class 2 & 3 only
- Crown Land Commitments
  - Agriculture
    - **F** - forage lease
    - **C** - cash rental lease
  - Order-in-Council
    - **W** - Wildlife Management Area

1 0 1 2 3 4 5 mi

1 0 1 2 3 4 5 6 7 km



EXTENSIVE SAND AND GRAVEL

THE AQUIFERS ARE ALMOST CONTINUOUS THROUGHT THE INDICATED AREA. THE DEPTH TO THE AQUIFERS RANGERS FROM LESS THAN 10m (33FT.) TO 60m (200FT). WELL YIELD GENERALLY IS AROUND 1.0 L/S (15 I.G.P.M.) HIGH CAPACITY WELLS COULD YIELD MORE THAN 20.0L/S (260 I.G.P.M.) AT SOME LOCATIONS. WATER QUALITY RANGES FROM FAIR TO VERY POOR; HIGH SULPHATE CONCENTRATION AND VERY HIGH HARDNESS ARE COMMON.

LENSES OF SAND AND GRAVEL.

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SHALE

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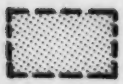
DRAWN S.S	PROVINCE OF MANITOBA DEPARTMENT OF NATURAL RESOURCES WATER RESOURCES BRANCH	ROBLIN - CARTWRIGHT PL
CHECKED		AQUIFE
PREPARED M.RUTULIS	SUBMITTED L. Thorp APPROVED	SCALE 1:250,000 DATE Oct. 84



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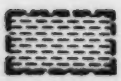

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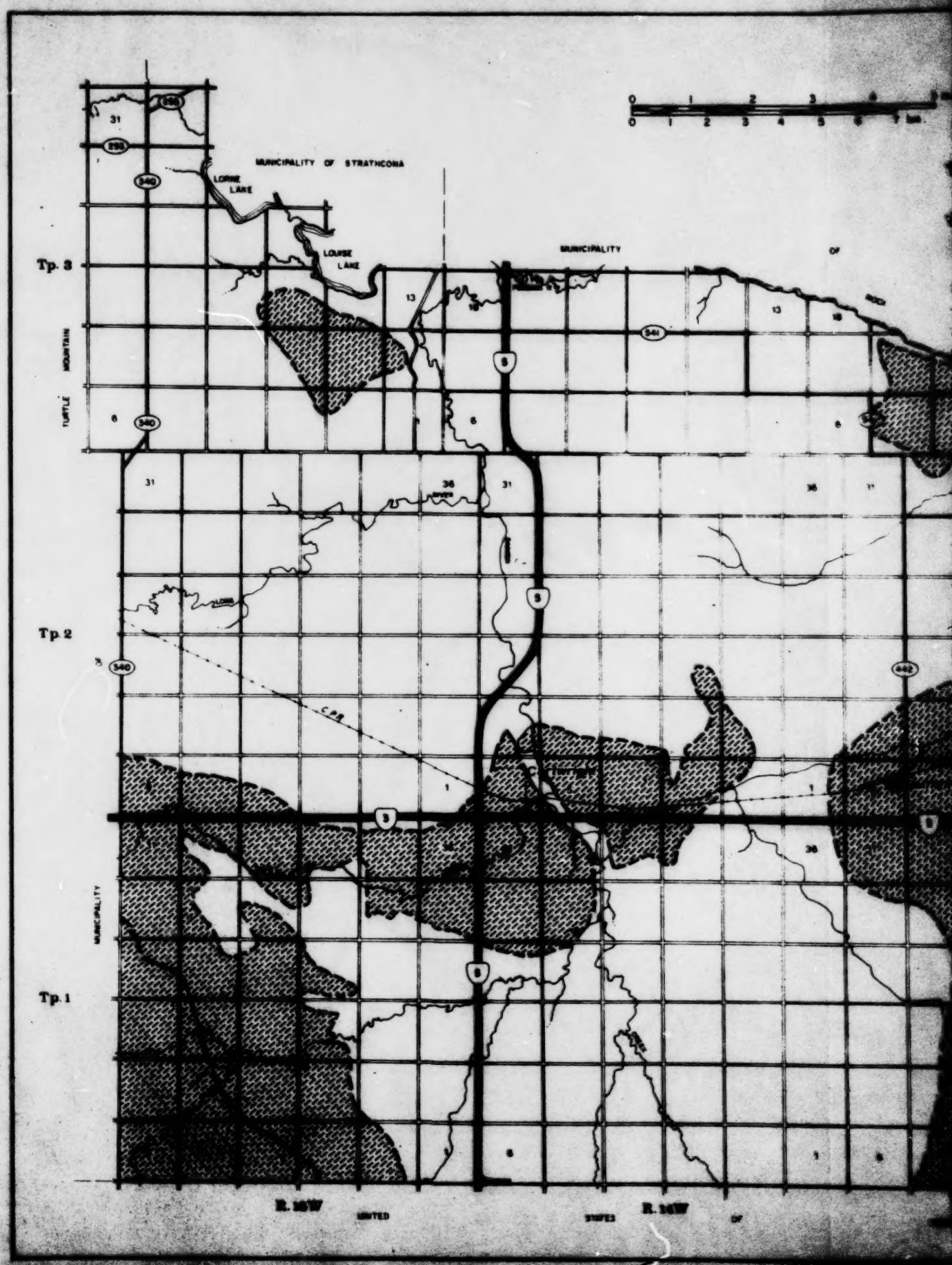
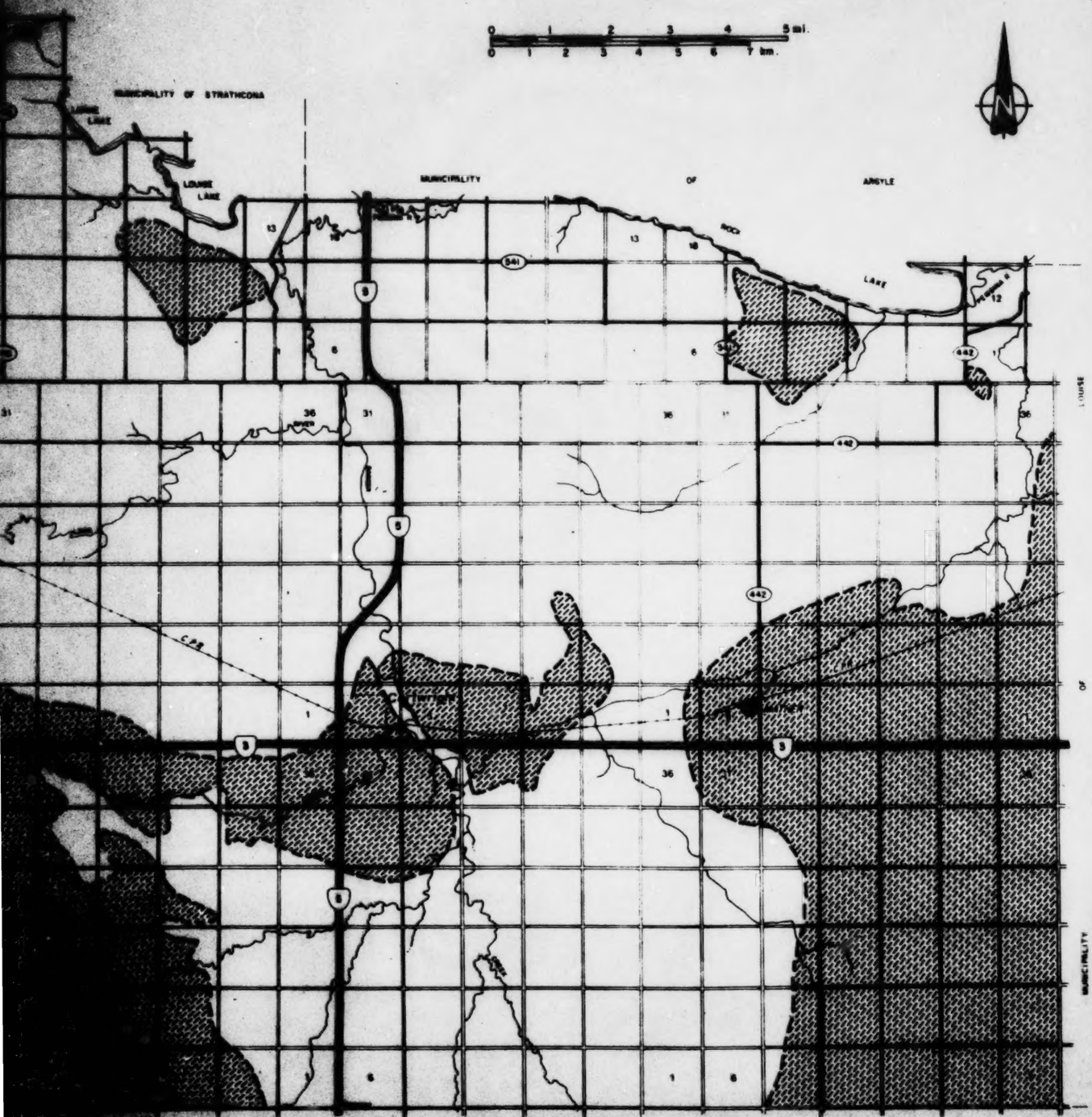
MAP 2

DRAWN S.S	PROVINCE OF MANITOBA DEPARTMENT OF NATURAL RESOURCES WATER RESOURCES BRANCH	ROBLIN - CARTWRIGHT PLANNING DISTRICT
CHECKED		AQUIFERS
M. BUTULIS	APPROVED	SCALE AS SHOWN · DATE 84 09 14 · SHEET 1 OF 1 · FILE NO. 10-1-7-1328


MUNICIPALITY OF STRATHCONA
LORNE LAKE
LOUISE LAKE
MUNICIPALITY OF
TURTLE MOUNTAIN
Tp. 3
Tp. 2
Tp. 1
MUNICIPALITY
R. 16W
R. 14W
UNITED STATES OF



GROUNDWATER POLLUTION HAZARD AREA

MODIFIED AFTER D. SIE, 1978
GROUNDWATER POLLUTION HAZARD
MAP, BRANDON.

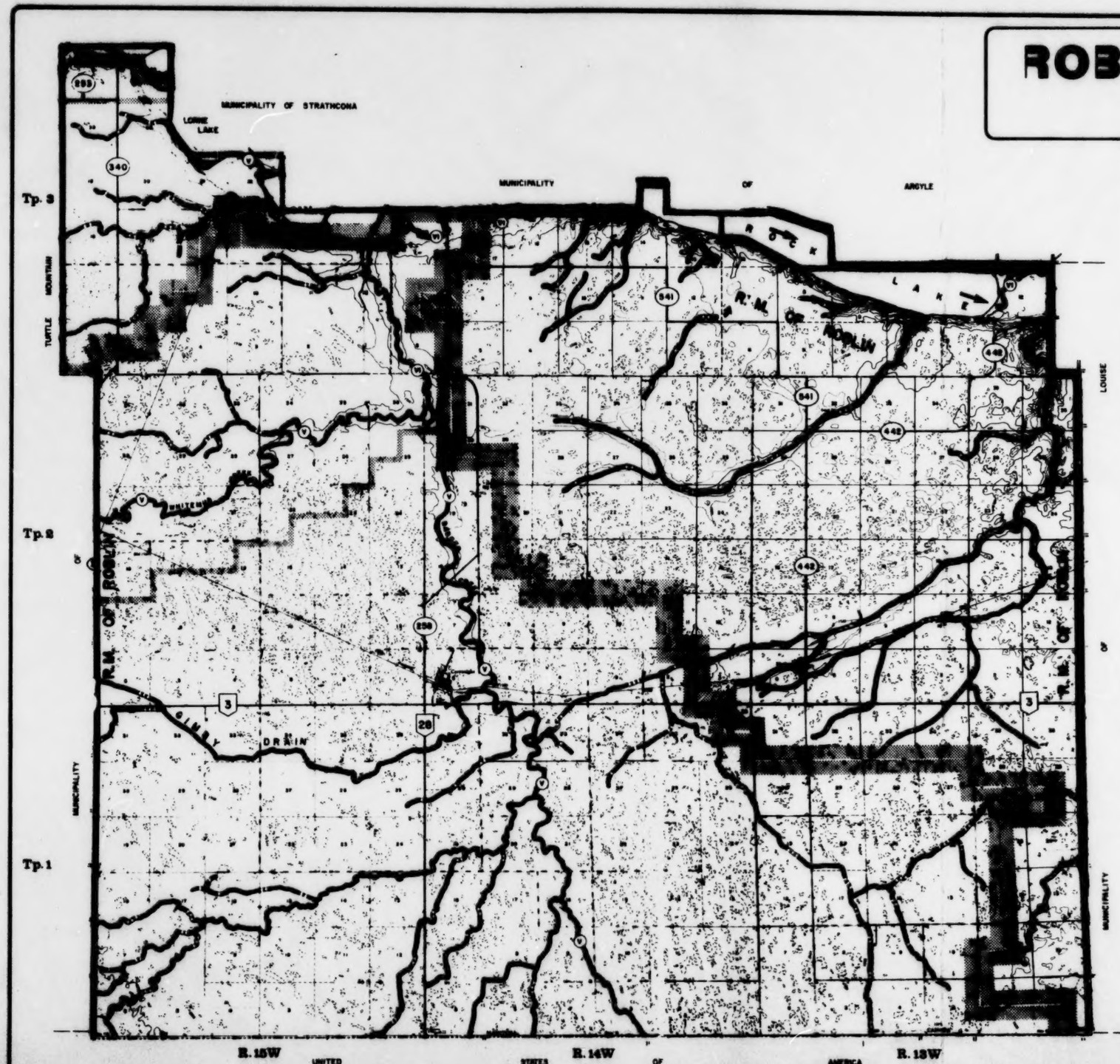
NOTE: DETAILED FIELD INVESTIGATIONS
MAY SHOW THAT GROUNDWATER POLLUTION HAZARD
DOES NOT EXIST IN SOME PARTS OF THE INDICATED AREAS.

MAP 3

DRAWN S.S	PROVINCE OF MANITOBA DEPARTMENT OF NATURAL RESOURCES WATER RESOURCES BRANCH	ROBLIN - CARTWRIGHT PLANNING DISTRICT
CHECKED		GROUNDWATER POLLUTION HAZARD AREAS
PREPARED M.RUTULIS	SUBMITTED APPROVED	SCALE 40 Statute Miles · DATE 80 09 10 · SHEET 1 OF 1

ROBLIN - CARTWRIGHT PLANNING DISTRICT

Map 4.
Surface Drainage Systems



LEGEND

WATER COURSE

- 1st ORDER DRAINS
- 2nd ORDER DRAINS
- 3rd ORDER DRAINS
- 4th ORDER DRAINS
- 5th ORDER DRAINS
- 6th ORDER DRAINS
- 7th ORDER DRAINS

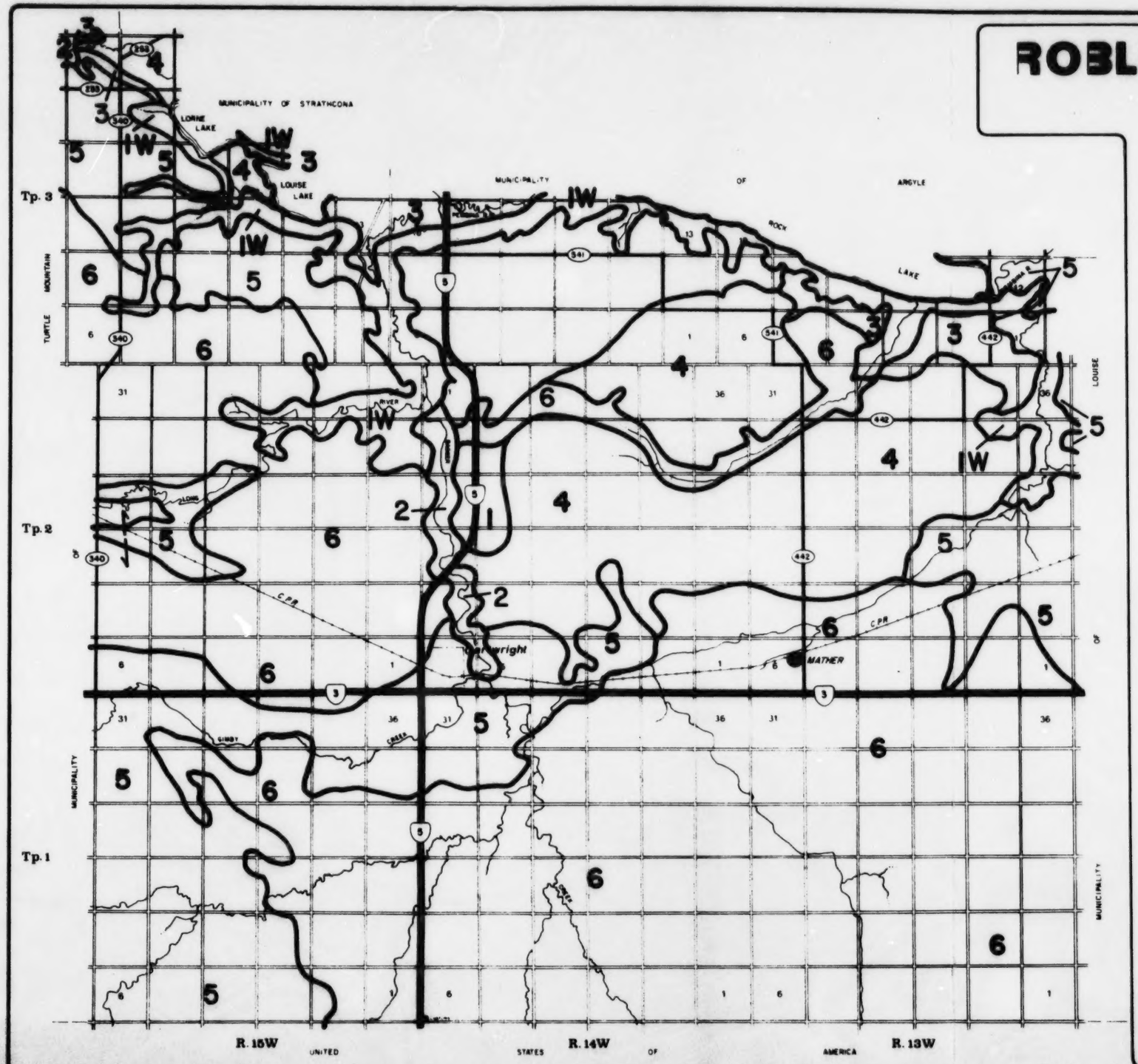
- LIMITS OF DRAINAGE AREA
- CITY, TOWN AND MUNICIPAL BOUNDARIES
- PROVINCIAL TRUNK HIGHWAY (3)
- PROVINCIAL ROADS (513)
- SUBDIVISION BOUNDARY

SCALE IN MILES
0 1 2 3 4

SCALE IN KILOMETRES
0 1 2 3 4 5 6 7 8

ROBLIN-CARTWRIGHT PLANNING DISTRICT

Map 5. Land Capability for Wild Ungulates (C.L.I.).*



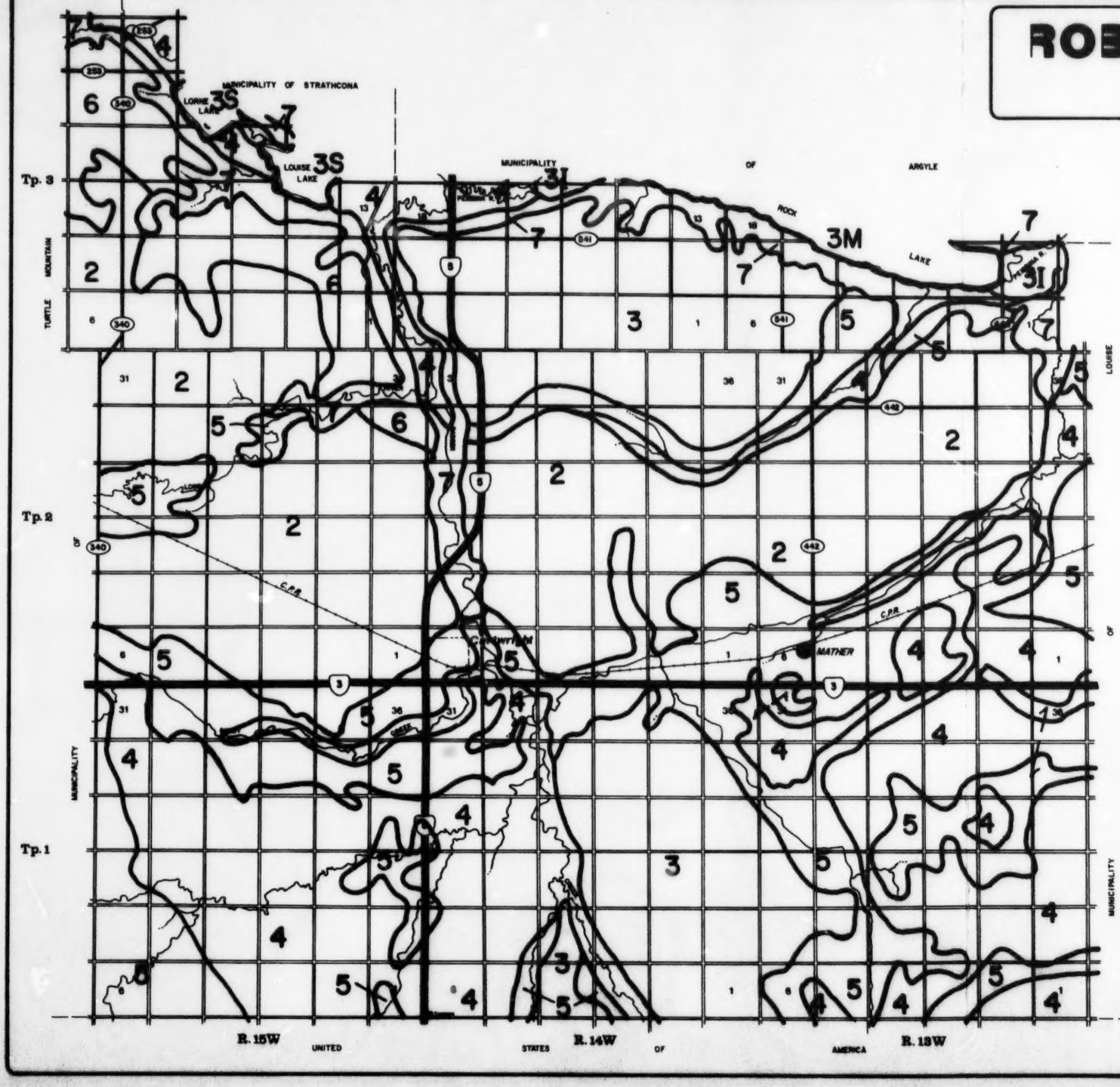
*Canada Land Inventory

1 0 1 2 3 4 5 mi

1 0 1 2 3 4 5 6 7 km

ROBLIN-CAREWRIGHT PLANNING DISTRICT

Map 6. Land Capability for Waterfowl (C.L.I.)*



*Canada Land Inventory

1 0 1 2 3 4 5 mi.

1 0 1 2 3 4 5 6 7 km